

What is claimed is:

1. A system for limiting an increase in the inside air temperature of a passenger compartment of a vehicle, the system comprising:

a solar radiation reducing means for reducing an amount of solar radiation, which enters the passenger compartment through at least one transparent panel of the vehicle; and

a control means for controlling the solar radiation reducing means, wherein when the control means determines that the vehicle is in a parked state, the control means operates the solar radiation reducing means to reduce the amount of solar radiation entered the passenger compartment through the at least one transparent panel.

2. The system according to claim 1, wherein the solar radiation reducing means reduces the amount of solar radiation only at a side of the passenger compartment, at which solar radiation is directly received from the sun.

3. The system according to claim 1, wherein:

the at least one transparent panel includes at least one window glass;

the solar radiation reducing means includes a voltage sensitive material, which is sensitive to voltage applied thereto and is provided to each of the at least one window glass;

the voltage sensitive material changes a light

transmittance of the corresponding window glass upon application of voltage to the voltage sensitive material; and

the control means controls application of the voltage to the voltage sensitive material of at least one of the at least one window glass such that the voltage sensitive material reduces the light transmittance of the corresponding window glass when the vehicle is held in the parked state.

4. The system according to claim 3, wherein the at least one of the at least one window glass is located adjacent a driver's seat of the vehicle.

5. The system according to claim 1, wherein the control means operates the solar radiation reducing means to reduce the amount of solar radiation entered the passenger compartment through the at least one transparent panel when at least one of the following conditions is satisfied:

the inside air temperature of the passenger compartment of the vehicle held in the parked state is equal to or greater than a predetermined temperature;

the outside air temperature outside the passenger compartment of the vehicle held in the parked state is equal to or greater than a predetermined temperature; and

the amount of solar radiation entered the passenger compartment of the vehicle held in the parked state is equal to or greater than a predetermined amount.

6. The system according to claim 5, wherein the control means determines that the amount of solar radiation entered the passenger compartment of the vehicle held in the parked state is equal to or greater than the predetermined amount when a cumulative amount of solar radiation, which has entered the passenger compartment and has been measured since time of initiating parking of the vehicle, reaches a predetermined cumulative amount.

7. The system according to claim 5, further comprising a ventilating means for ventilating the passenger compartment, wherein the control means operates the ventilating means to ventilate the passenger compartment when the at least one of the conditions is satisfied.

8. The system according to claim 6, wherein the ventilating means is operated to provide a larger amount of air to a side of the passenger compartment, at which solar radiation is directly received from the sun, in comparison to the rest of the passenger compartment.

9. The system according to claim 7, wherein the ventilating means ventilates the passenger compartment by discharging air through an opening provided in a surface of at least one interior wall of the passenger compartment.

10. The system according to claim 9, wherein the at least one

interior wall of the passenger compartment includes at least one of a wall of a door, a wall of an instrument panel and a wall of a ceiling of the passenger compartment.

11. The system according to claim 7, wherein:

the ventilating means includes an air conditioning system, which includes a blower; and

the control means drives the blower to ventilate the passenger compartment when the at least one of the conditions is satisfied.

12. The system according to claim 11, wherein the blower blows air outwardly through a surface of a seat placed in the passenger compartment.

13. The system according to claim 7, wherein:

the ventilating means includes an air conditioning system, which has a refrigeration apparatus;

when any switch provided in the passenger compartment is turned on, the control means drives the air conditioning system, so that the passenger compartment is ventilated by the air cooled by the refrigeration apparatus.

14. The system according to claim 1, wherein the control means operates the solar radiation reducing means to reduce the amount of solar radiation entered the passenger compartment through the at least one transparent panel when a position of the sun relative

to the vehicle is within a predetermined range.

15. The system according to claim 1, wherein:

the solar radiation reducing means includes an electrically driven sunshade arrangement, which is provided to each of the at least one transparent panel and includes a curtain and an electric motor for driving the curtain; and

the control means drives the sunshade arrangement of at least one of the at least one transparent panel such that the curtain of the sunshade arrangement covers at least a portion of the corresponding transparent panel when the vehicle is held in the parked state.

16. The system according to claim 1, further comprising:

a vehicle air conditioning unit, which conditions air in the passenger compartment and includes a vapor compression refrigeration apparatus and a blower; and

a seat air conditioning unit, which is provided to a seat of the passenger compartment and includes a blower, wherein:

when the control means operates the solar radiation reducing means to reduce the amount of solar radiation entered the passenger compartment through the at least one transparent panel, the control means also operates the vehicle air conditioning unit and the seat air conditioning unit in such a manner that the vehicle air conditioning unit is operated in an outside air intake mode to take outside air located outside the passenger compartment and to adjust the temperature of the

outside air, and the blower of the seat air conditioning unit is operated to take the temperature conditioned outside air supplied from the vehicle air conditioning unit and to blow the temperature conditioned outside air outwardly through a surface of the seat.

17. The system according to claim 16, wherein:

the refrigeration apparatus of the vehicle air conditioning unit includes a heat exchanger;

upon operation of the solar radiation reducing means to reduce the amount of solar radiation entered the passenger compartment through the at least one transparent panel, when an any switch provided in the passenger compartment is turned on, the control means starts an engine of the vehicle and operates the heat exchanger of the vapor compression apparatus to reduce the inside air temperature of the passenger compartment.

18. The system according to claim 1, wherein:

the control means determines that the vehicle is in the parked state when a start switch for starting an engine of the vehicle is turned on; and

the control means determines that the vehicle is not in the parked state when the start switch is not turned on.